

Legislative Audit Division

State of Montana



Report to the Legislature

February 1997

Performance Audit Report

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Lease vs. Build Analysis

Helena-area State Office Space

This report contains information and findings related to an analysis of the cost effectiveness of leasing state office space compared to construction of a new building. The report includes:

- ▶ Background information.
- ▶ Life cycle cost analysis methodology.
- ▶ Projected lease and build costs.
- ▶ Analysis assumptions.
- ▶ Sensitivity analysis.
- ▶ Non-quantifiable considerations.

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PERFORMANCE AUDITS

Performance audits conducted by the Legislative Audit Division are designed to assess state government operations. From the audit work, a determination is made as to whether agencies and programs are accomplishing their purposes, and whether they can do so with greater efficiency and economy. In performing the audit work, the audit staff uses audit standards set forth by the United States General Accounting Office.

Members of the performance audit staff hold degrees in disciplines appropriate to the audit process. Areas of expertise include business and public administration, statistics, economics, computer science, communications, and engineering.

Performance audits are performed at the request of the Legislative Audit Committee which is a bicameral and bipartisan standing committee of the Montana Legislature. The committee consists of six members of the Senate and six members of the House of Representatives.

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February 1997

The Legislative Audit Committee
of the Montana State Legislature:

We conducted a performance audit of costs for leasing versus building state office space in Helena. This report contains findings related to our analysis. The report also contains information regarding other considerations necessary to make an informed decision.

We wish to express our appreciation to Department of Administration personnel, and other state agency personnel involved in our review, for their cooperation and assistance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott A. Seacat", with a long horizontal line extending to the right.

Scott A. Seacat
Legislative Auditor

Legislative Audit Division

Performance Audit

Lease vs. Build Analysis

Helena-area State Office Space

Members of the audit staff involved in this audit were Kent Rice and Jim Nelson.

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Appointed and Administrative Officials

Department of Administration

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Dave Ashley, Deputy Director

Debra M. Fulton, Administrator, General Services Division

Garett Bacon, Leasing Officer, General Services Division

Report Summary

Introduction

The Legislative Audit Committee requested the Legislative Audit Division conduct a performance audit of costs for leasing versus building state office space in Helena. Specifically, the Committee was interested in determining whether continued leasing of office space or construction of a new building is more cost effective. This audit concentrated on conducting a detailed lease versus build analysis of current lease holdings in Helena.

Authority Over Stage Agency Space

State law grants the Department of Administration (DofA) jurisdiction over allocation of state agency space. DofA is responsible for determining space requirements and allocating space in all owned and leased space, excluding the University System. According to statute, no state agency may lease, rent, or purchase office space without prior approval from DofA. In addition, a state agency may not alter, improve, repair, or remodel a State building in the Capitol area without approval from DofA.

Current State Agency Lease-Holding

As of November 1996, there were 38 leases in effect for state office space. Office space includes locations where employees (FTE) occupy offices and conduct program operations. In some cases, this includes space other than "traditional" office space. For example, one of these 38 leases is for parking space only. There are 13 agencies with contracts for these 38 leases. The total annual cost for leases is about \$2.4 million. Approximately 971 FTE occupy more than 300,000 square feet of leased space.

The Analysis

Our audit utilized two methods of analysis to compare lease costs with construction costs: 1) present value, and 2) internal rate of return. ***Present value*** is a life cycle cost analysis methodology. This method looks at the costs of alternatives over a specified period of time. Future costs need to be expressed in "current" or "present" dollars. The other method used in analyzing alternatives was ***internal rate of return***. This is an interest rate for the return on an investment in a project. The internal rate of return can be compared to the cost of capital to determine whether a project should be completed.

Report Summary

Assumptions

There are numerous assumptions which must be made prior to analyzing costs associated with leasing and building. These assumptions, or variables, are used to calculate and project costs. Variables are usually expressed as dollars per square foot or FTE per square foot. Total costs are calculated based on total square footage. The assumptions we made for our analysis are based on available information and audit judgment.

A figure of 200 square feet per FTE was used to determine building occupancy. The number of FTE occupying the new building is the number of FTE that would be moved out of leased space. The amount of space this "vacates" is based on the average square footage per FTE in current leased space. An inflation rate was used to project costs for the 40 year term of the analysis.

Our analysis uses a General Obligation bond option with an estimation of the cost of financing at 4.7 percent. Building operational costs, including janitorial, utilities, and general maintenance and repairs, were projected using the current Capitol Complex rental rate. The same procedure and rate used to project future lease costs was used to project future building operational costs.

The final cost for projecting building costs included expenses for moving personnel and equipment, penalties for terminating leases, and any other costs associated with moving out of leased space into a new building. These costs are "one-time" costs.

Conclusion: Our Analysis Indicates Construction of a New Building is Less Costly than Continuing to Lease

When comparing present value costs for leasing and building, our analysis indicates building is less costly. Building would save the state approximately \$4.2 million in "today's dollars" over 40 years. This does not include the asset value of the state-owned building at the end of that period. The analysis assumes construction of a building on the Capitol Complex with a total space of 90,000 square feet. This would allow 450 FTE to vacate leased space.

The construction option requires the State to expend a large amount of funds initially. The factors mentioned in this report, as well as others considered important to decision-makers, must be weighed against projected cost savings to make an informed decision.

Chapter I - Introduction

Introduction

The Legislative Audit Committee (LAC) requested the Legislative Audit Division conduct a performance audit of costs for leasing versus building state office space in Helena. Specifically, the LAC was interested in determining whether continued leasing of office space or construction of a new building is more cost effective. This performance audit concentrated on conducting a detailed lease versus build analysis of current lease holdings in Helena.

Audit Objectives

The main audit objective for this project was:

Is it less costly for the State to continue to lease or to construct a new building for office space on the Capitol Complex?

In order to satisfy this objective, we answered the following questions:

1. What is the extent of leasing by state agencies in Helena?
2. What impact does leasing have on program operations?
3. What would it cost to construct a new building in Helena?
4. How do costs for leasing compare to costs for construction of a new building?

Audit Scope and Methodology

The audit was conducted in accordance with government auditing standards for performance audits. We concentrated on conducting a lease versus build analysis. This included reviewing reports on the subject, researching methods for analyzing costs, reviewing current state leases, and interviewing state personnel and other professionals as required.

Reports from our office and other state audit organizations as well as related reports from other entities were obtained and reviewed to determine possible techniques for conducting lease vs build analyses. References related to possible cost analysis methods were also researched. We selected the most appropriate method for analysis based on our review. We used two methods of analysis to provide a comparison.

To complete our analysis, assumptions must be made to provide variables for calculating the equations. Our assumptions were

Chapter I - Introduction

developed and refined during completion of audit fieldwork. These assumptions are based on comparative data and reasonable judgment.

Audit scope included review of current state leases in Helena. We reviewed the Statewide Lease Report developed by the General Services Division (GSD), Department of Administration. GSD lease files, which contain copies of all approved leases, were reviewed to verify and update information in the lease report. The review of leases included a determination of base lease costs and costs for utilities, janitorial, and building maintenance, if available. To complete this process, we sent a written questionnaire to representatives from each agency leasing office space to verify GSD information and to obtain additional lease information. During this stage of the audit, we also interviewed state personnel to obtain and/or verify lease information. For specific lease information see Appendix A.

We contacted personnel from several agencies with numerous lease holdings to obtain input on the "impacts" leasing has on program operations. We questioned personnel as to the affects multiple locations have on the agency's ability to operate efficiently and effectively.

To determine costs for building new office space, we interviewed personnel from the Architecture and Engineering Division and GSD. We also contacted a judgmental sample of contractors and architects in the Helena area to obtain cost estimates for building new office space. Information obtained from state and private entities was compared to identify significant differences between estimations. Possible locations for building on the Capitol Complex, building restrictions and requirements, and total possible square footage were identified. Funding options for construction of a new building were identified through interviews with personnel from the Department of Administration and the Department of Commerce.

The present value of lease and build costs were calculated using compiled cost estimations and final assumptions. Various scenarios were analyzed to determine the impact of changes to different variables on the costs of leasing versus building.

Chapter I - Introduction

Our analysis also considers areas which are non-quantifiable. These include items such as efficiency gains for state operations due to co-location, increased services to the public, reduced costs due to shared equipment such as computer systems, etc. These non-quantifiable items were identified through interviews, review of available information, and audit expertise.

Scope Exclusions

Our audit work was limited to the Helena area. We did not review leased space in other cities throughout Montana. In addition, we limited our review to "office" space; that is, warehouse and storage space was excluded from the analysis. However, the extent of warehouse and storage space is provided in Appendix B for informational purposes.

Audit scope did not include a review of GSD procedures for surveying state agency space utilization. We did not determine whether current space, both owned and leased, is actually needed or used efficiently. The director of the Department of Administration is responsible for allocating space in owned and leased buildings. As a result, we assumed current space is utilized as efficiently as possible. In addition, ways to reduce costs for currently leased office space were not reviewed as part of this analysis.

Report Format & Organization

The format of the report is not typical of the Legislative Audit Division's performance audit reports. Our typical audit report presents audit findings with corresponding recommendations. This report does not include recommendations. Findings are detailed in the body of the report, followed by a conclusion on the analysis.

Report organization consists of four chapters: 1) Introduction, 2) Background, 3) Analysis, and 4) Conclusion. Information and results of our lease versus build analysis are presented in the following two chapters. The final chapter concludes on the results of the analysis.

Chapter II - Background

Department Authority

Section 2-17-101, MCA, grants the Department of Administration (DofA) jurisdiction over allocation of state agency space. DofA is responsible for determining space requirements and allocating space in all state-owned and leased space, excluding University System space. According to statute, no state agency may lease, rent, or purchase office space without prior approval from DofA. In addition, a state agency may not alter, improve, repair, or remodel a state building in the Capitol area without approval from DofA. The Capitol area is defined as “the geographic area within a 10-mile radius of the State Capitol.” DofA has given space allocation responsibility to the General Services Division (GSD).

The Montana Operations Manual, management memo 1/90/4-4, provides procedures for state agencies to follow regarding space. If an agency needs additional state-owned space in the Capitol Complex, wishes to alter state-owned facilities, desires to lease space, or must acquire a service contract for leased space, the agency must submit a written request to GSD. An agency must notify GSD of any excess state-owned space. Periodic space surveys are to be performed by the GSD to ensure efficient use of state-owned space.

GSD Guidelines

GSD obtains lease information from state agencies annually and publishes the Statewide Lease Report. This report lists each agency's leased office space by city, including square footage, lease price, contract expiration date, and services provided. The report also includes lease guidelines. These guidelines include the following:

- GSD has prior approval authority over all lease contracts.
- A maximum lease term of four years is preferred.
- Leases exceeding six years require approval by the director of DofA.
- Escalation clauses in state leases are to be avoided whenever possible.
- Leases should clearly establish who is responsible for paying utilities and services.

Chapter II - Background

- Cost per square foot for lease renewals is to be less than 115 percent of the present lease rate.
- Cost per square foot for new leases is to be less than 125 percent of the average rate for other state-leased space within the city.
- Lease contracts of \$5,000 or less annually do not require prior approval from GSD.
- A maximum of 200 gross square feet per FTE is recommended.
- Rates exceeding \$8.50 per square foot, and total annual lease costs exceeding \$48,000 may only be approved by DofA's director.

Related Statutes

According to section 18-2-102, MCA, a building costing more than \$50,000 may not be constructed without the consent of the legislature. Under this law, DofA is granted authority to supervise construction of buildings including reviewing plans, approving bond issues, awarding contracts, and accepting completed buildings.

The Long-Range Building Program (LRBP), Title 17, chapter 7, part 2, MCA, provides funding for construction and major maintenance of state buildings. The program is funded with general obligation (GO) bonds, and portions of the cigarette tax, coal severance tax, and general funds. Section 17-5-402, MCA, grants authority to the Board of Examiners to issue LRBP bonds when authorized by a $\frac{2}{3}$ majority vote of each house of the legislature. The Governor, Secretary of State, and Attorney General constitute the Board of Examiners. The full faith, credit, and taxing powers of the state are pledged for payment of all GO bonds.

According to section 18-3-101, MCA, DofA has the authority, as part of the LRBP, to enter into a rental contract which provides for an option to purchase a building. This requires authorization by a $\frac{2}{3}$ majority vote of each house of the legislature. The contract cannot exceed 20 years. The purchase price at the end of the contract period cannot exceed \$50,000.

Related Studies

Numerous studies have been completed related to leased space and analysis of leasing versus building. LAD reviewed state agency lease holdings in Helena in 1985. The result of the review indicated a lease versus purchase analysis would be beneficial. Our office completed a legislative request in 1987 reviewing the potential for consolidation of state agency lease holdings in Helena. A lease versus buy/construct analysis was completed to determine which option was more economical. The results of this analysis, based on the assumptions made by the auditors, determined it was less expensive to continue to lease office space than construct a new building.

In 1984, our office completed a lease versus purchase analysis of state office space in Bozeman. This study was similar to the project mentioned above, including the results. Based on the assumptions, it was less expensive to continue to lease than to build.

We released a performance audit report in January 1989 on space utilization of Helena-located state agencies. A recommendation was made to the legislature to revise statutes in order to establish an active space allocation/utilization function. This recommendation was implemented. The legislature amended state law by requiring DofA to determine agency space requirements, allocate space, and approve agency leases. The GSD created a leasing officer position responsible for assuring compliance with statutory requirements.

More recently (April 1996), DofA completed a lease or build analysis for Helena-area state office space. This study compared costs of leasing versus costs to build a new building on the Capitol Complex. Based on the assumptions made in the analysis, present value costs for state ownership totalled approximately \$24.5 million which were less than costs for continuing to lease by about \$2.4 million over 40 years.

The GSD recently requested funding for a new building through the LRBP. The initial request was to fund a 180,000 square foot building on the Department of Transportation site. This building size was revised to 200,000 square feet. The cost to build is estimated at \$32 million. The building would be occupied by the

Chapter II - Background

Department of Public Health and Human Services (DPHHS). The space vacated by DPHHS would be utilized by personnel from several departments: 1) Revenue, 2) Commerce, 3) Natural Resources and Conservation, and 4) Labor and Industry. This would also provide additional space for the DofA in its current location. According to GSD's LRBP request, Helena-area agencies have become fragmented, the cost of leased space is escalating, and the proposal will decrease overall costs and increase agency efficiency.

State Office Space In Helena

Current Leased Space

As of November 1996, there were 38 leases in Helena for state office space. Office space includes locations where FTE occupy offices and conduct program operations. In some cases, this includes space other than "traditional" office space. For example, one of these 38 leases is for parking space only. There are 13 agencies with contracts for these 38 leases. The total annual cost for leases is about \$2.4 million. Approximately 971 FTE occupy more than 300,000 square feet of leased space. The following table summarizes each agency's leased office space. For a complete listing of agency leases, see Appendix A.

Table 1
Current Helena-Area Lease Information
(as of November 1996)

Agency	# of Leases	Total Sq. Ft.	Total FTE	Total Annual Cost
Commerce	9	50,522	156.25	\$385,299.87
DPHHS	6	50,172	209.50	\$443,234.95
DNRC	4	56,818	163.30	\$477,608.03
Labor & Industry	4	24,103	119.17	\$223,974.60
Justice	3	17,088	65.00	\$144,345.00
Administration	3	30,950	31.00	\$114,076.00
OPI	2	12,096	39.00	\$100,594.16
Revenue	2	11,784	34.00	\$95,908.00
DEQ	1	28,256	100.00	\$240,176.04
Public Service Regulation	1	15,600	37.00	\$145,110.60
Montana Arts Council	1	1,876	7.00	\$18,808.00
Consumer Counsel	1	1,420	5.00	\$13,077.00
Supreme Court	1	1,300	5.00	\$7,920.00
TOTAL	38	301,985	971.22	\$2,410,132.25

Source: Compiled by the Legislative Audit Division.

Current State-Owned Space

GSD supplies agencies with office space in state-owned buildings. According to GSD, 36 state-owned buildings are managed in Helena. These buildings comprise over 850,000 square feet of office space. This square footage figure includes the Capitol building.

Agencies in buildings on the Capitol Complex pay a flat rate for rent. This charge covers costs incurred by GSD for providing maintenance, janitorial services, parking, and utilities. Currently, the Capitol Complex rental rate is \$4.37 per square foot.

Chapter III - The Analysis

Introduction

This chapter discusses the methods of analysis used to compare lease costs with construction costs. An explanation of variables necessary to calculate costs are presented, including the assumptions made for our analysis. Projected lease costs and construction costs are indicated, as well as examples of effects on costs with changes in the variables. Financing options are briefly discussed. Discussions of non-quantifiable considerations are also contained in this chapter.

Present Value and Internal Rate of Return

Methods such as present value and internal rate of return are commonly used for this type of analysis. The following two sections describe these methodologies.

Present Value

Present value is a life cycle cost analysis methodology. This method looks at the costs of alternatives over a specified period of time. Future costs need to be expressed in “current” or “present” dollars. Present value analysis accomplishes this.

The value of a dollar changes with time. This is sometimes referred to as the “time value of money” or the “purchasing power” of money. A present dollar has more value than a dollar in the future. The reason for this is inflation. In order to convert future dollars to present dollars, future dollars must be discounted. In other words, future dollars must be reduced to reflect present values.

To determine the present value of a future sum of money, an interest rate and time period are used in a mathematical equation. This mathematical equation uses a discount factor. This discount factor is multiplied by a future sum to reduce the amount to its present value. For example, what is the present value of \$100 one year from now if the interest rate is 5 percent per year? To determine the present value, you must multiply \$100 by the discount factor. The result is \$95.24. For a more detailed explanation of present value, refer to Appendix C.

There are two variables in the mathematical equation associated with the discount factor: 1) the interest rate, and 2) the time period. As either of these two variables increase, the present value decreases. Thus, the greater the interest rate and the longer the time period, the

Chapter III - The Analysis

less a future sum of money is worth today. In the example above, if the interest rate is changed to 7 percent per year, the present value decreases to \$93.46. When the time period changes to three years, the present value is only \$86.38.

Internal Rate of Return

Another method used in analyzing alternatives is the *internal rate of return (IRR)*. The IRR is an interest rate for the return on an investment in a project. The IRR can be compared to the cost of capital to determine whether a project should be completed. For example, if a project is to be funded with a General Obligation (GO) bond at an interest rate of 4.7 percent (the approximate rate of a recent state bond issue), the IRR should be greater than 4.7 percent in order to accept the project. For further explanation of the IRR see Appendix C.

Assumptions

There are numerous assumptions which must be made prior to analyzing costs associated with leasing and building. These assumptions, or variables, are used to calculate costs. These variables are usually expressed as dollars per square foot or FTE per square foot. Total costs are calculated based on total square footage. The assumptions we made for our analysis are based on available information and reasonable judgment. The following two sub-sections describe the variables used in projecting lease and build costs. We developed a list of assumptions which is included in the section entitled The Analysis on page 18.

Projected Lease Costs

Calculations of current lease costs were used to project future costs. Current lease costs are based on information obtained from General Services Division (GSD) and individual agencies. We reviewed agency functions operating within the leased space to identify programs with "special" needs. We determined five of the thirty-eight leases have specialized space needs. These five leases were excluded from our final lease cost projections due to their specialized needs. The following list identifies the five programs.

1. Property and Supply Bureau, Department of Administration.
 - This building has office space and also has warehouse-type space necessary for ongoing operations.

Chapter III - The Analysis

2. Montana Lottery, Department of Commerce.
 - This building has office space and warehouse-type space with specialized security requirements.
3. Weights and Measures Laboratory, Department of Commerce.
 - This building houses specialized equipment and materials used for program operations.
4. Air Operations Section, Department of Natural Resources and Conservation.
 - This building is a helicopter storage and maintenance facility with office space.
5. School Foods Division, Office of Public Instruction.
 - This building is used for office, training, and storage space. It is scheduled for demolition in May 1997.

The following table shows current Helena-area lease costs and occupancy levels used for our projections.

Table 2
Current Helena-Area Lease Costs and Occupancy Levels
Used to Project Future Costs
(excludes "specialized needs" space)

Total Number of Leases	33
Total Square Footage	248,769
Total Number of FTE	911.22
Square Footage per FTE (average)	265.92
Total Annual Lease Cost*	\$2,176,950
Total Annual Cost per Square Foot	\$8.75

*Includes utilities, janitorial, maintenance, parking, and pass through costs.

Source: Compiled by the Legislative Audit Division.

Calculating total lease costs starts with determining the size of a new building. The number of FTE the new building would accommodate is then calculated. Based on information from GSD personnel, a

Chapter III - The Analysis

figure of 200 gross square feet per FTE was used to determine building occupancy. This figure includes common space such as bathrooms, hallways, conference rooms, and reception areas. The number of FTE occupying the new building is the number of FTE that would be moved out of leased space. The amount of space "vacated" is based on the average square footage per FTE in leased space (265.92). The costs of vacated leased space is calculated using the total cost per square foot (\$8.75). It should be noted, because a new building can be designed to use space more efficiently, more FTE can occupy less total space than is required in current leased space.

Annual lease costs were projected for our analysis using the figures noted above. The square footage per FTE, the total cost per square foot, and the number of FTE were multiplied together to calculate the annual lease cost for the first year of the projection. An inflation rate was used to project costs for the remaining years of the analysis. This rate was based on the U.S. Department of Labor's, Bureau of Labor Statistics, Consumer Price Index. Each subsequent year's lease cost is increased by this inflation factor.

The present value was then calculated for each year's projection. This was accomplished using the present value methodology described previously. The present values were added together to obtain a total lease cost projection. The calculated total is expressed in terms of present dollars. For our analysis, a time frame of 40 years was used. A 40-year period is a commonly used estimation of the useful life of a building.

Projected Building Costs

To project costs for construction of a new building, several costs need to be determined. One cost is debt service. In order to construct a new building, funds must be obtained. The normal method for obtaining state construction funds is the sale of GO bonds. This debt must be retired over some specified period of time. For our analysis, we used 20 years which is a standard GO bond term.

Another assumption was required for calculating debt service on a bond issue. The interest rate a GO bond issue carries will vary

Chapter III - The Analysis

depending on market conditions and the structure of bond maturity schedules. As a result, we used an approximation to calculate the debt service for a bond issue of 20 years. This approximation was based on actual debt service schedules compiled for the Department of Administration (DofA) in August 1996.

Another cost required for projecting total building costs is operations. Building operational costs include janitorial, utilities, and general maintenance and repairs. To calculate this cost for our analysis, we used the current Capitol Complex rental rate. This is a good starting point for the analysis. The current Complex rate is a conservatively high figure due to the differences in efficiencies between current state buildings and a new building.

An inflation rate was used to project costs for the remaining years of the analysis. The same procedure and rate used to project future lease costs was used to project future building operational costs.

Our analysis also included an "other" category for projecting building costs. Costs in this category could include expenses for moving personnel and equipment, penalties for terminating leases prior to contract expiration, and any other costs associated with moving out of leased space into a new building. These costs were included in our calculations as a "one-time" cost. It was assumed these costs would be incurred only in the first year of the analysis. We did not include penalty costs in our analysis because we did not speculate on which leases would be terminated, nor did we make a judgment on when a building might be constructed.

The building debt service, operational costs, and other costs categories were added together resulting in a total building cost estimation. The present value was then calculated for each year's projection using the same procedure described for calculating lease projections. The present values were added together to obtain a total building cost projection over a 40-year period.

Chapter III - The Analysis

Financing Options

Several options for raising capital exist including issuance of GO bonds, a Board of Investments loan, ownership by the Board of Investments, a public-private partnership, or a General Fund appropriation. For an investment such as a new building, the normal option used is issuance of GO bonds by the Board of Examiners. GO bonds are backed by the full faith, credit, and taxing power of the state.

Another option for financing a new building is through the Board of Investments (BOI). With this option, the BOI would either finance a new building via a mortgage as it did with the existing Department of Public Health and Human Services Building, or purchase and hold the building as an investment in the pension portfolios. According to BOI officials, a minimum of 7.5 to 8 percent return would be required by the BOI with either option. Debt service would be structured according to the requirements of the BOI.

A third option for obtaining revenues is through a public-private partnership. There are several options for structuring the partnership. One option is to contract with a private developer to construct a new building according to the state's specifications. The state would then lease the building from the developer. A lease-purchase agreement could be structured to provide the state an option to purchase the building at the end of some specified period of time. The state would still be leasing under this scenario, but would have an option for ownership not available under current lease holdings. Lease payments would be paid by the agencies occupying space in the new building.

Finally, funds could be generated through a General Fund appropriation from the legislature. This option, while possible, is not considered probable.

Funding Sources

Construction of a new building creates debt service. The source of funding used to retire the debt may include all types of government funds. The source(s) depends on the structure of financing and the agency or agencies occupying space in the building. For example, the Department of Transportation issued bonds to obtain financing for construction of its current facility. The debt service on the bonds was retired using revenue generated from fuel taxes, motor carrier fees, etc. Depending on an agency's budget structure, federal funds could also be used, in part, to pay the debt service on financing.

If more than one agency occupies space in a new building, rent would be paid out of each agency's budget. This could be some combination of General Fund, state Special Revenue, and Federal Special Revenue. The amount of federal funding available depends on each program's allocation. As long as the rental rate is equitable, the federal government will normally fund its allocable share. Rent is paid to the building's owner. For our analysis, the building owner would be the State of Montana. GSD is the state's facility manager, so GSD would be responsible for rent collection. Rental payments would be used to retire the debt on the building.

The Analysis

Once cost projections and assumptions were finalized, the actual analysis was conducted. As noted earlier, we developed a list of assumptions. This list contains the values which we believe best estimate the variables needed to analyze lease and build costs. Table 3 gives our list of assumptions.

Chapter III - The Analysis

Table 3
LAD Analysis Assumptions

<u>CATEGORY</u>	<u>VARIABLE</u>	<u>ASSUMPTION</u>
✓	New building square footage	90,000 ft ²
✓	New building space allocation	200 ft ² /FTE
→	Number of FTE	450
→	Lease square footage per FTE	265.92 ft ² /FTE
→	Lease cost	\$8.75 /ft ²
⌘	Building cost	\$150 /ft ²
⌘	Building operational cost	\$4.37 /ft ²
⌘	Moving cost	\$200 /FTE
⌘	Financing option	GO bond
⌘	Financing term	20 years
⌘	Inflation rate	3 percent
⌘	Discount rate	4.7 percent
⌘	Analysis time period	40 years

KEY: ✓ physical characteristic
→ calculated/dependent factor
⌘ cost factor estimation

Note: these terms are explained in the following three sections.

Source: Compiled by the Legislative Audit Division.

Lease Assumptions

The table above indicates three assumptions were made for lease cost projects. The lease square footage per FTE and the lease cost per square foot figures were determined through review of GSD lease files and questionnaires completed by agency personnel. The third variable, number of FTE, is based on the estimated new building size. According to GSD personnel, 200 square feet per person is a standard figure for determining a building's FTE capacity.

Chapter III - The Analysis

Build Assumptions

Building cost projections require a few more assumptions than lease cost projections. The total square footage of the building is based on construction on the Capitol Complex. Considering City of Helena restrictions on building size and parking, a 90,000 square foot building appears to be the largest size that could be constructed on the Complex.

The \$150 cost per square foot to build is based on estimations from state personnel and the private sector. This figure represents a conservatively high estimation of the total cost to complete construction of a new building.

The \$4.37 per square foot building operational cost is the current rate assessed for occupying space on the Capitol Complex. If a new building were constructed on the Capitol Complex, it would be included in the Capitol Complex rent calculations. Agencies occupying space in the new building would be assessed the calculated rental rate. Although a new building may be more efficient than the existing buildings on the Capitol Complex, estimating the actual efficiency is difficult, if not impossible. Using the current rental rate provides what we believe to be a reasonable estimation of operational costs.

Moving costs are considered a building cost because personnel would be required to move out of leased space if a new building were constructed. The cost is estimated at \$200 per FTE based on information from GSD personnel.

Our financing option assumption is a 20-year GO bond issue. This is the usual method of financing construction projects for the State of Montana. In addition, 20 years is a normal time period used by the state for retirement of GO bonds.

Another cost often associated in this type of analysis is major improvements. Major building improvements may include repairs, preventive maintenance, upgrades, modifications to meet changes in building code requirements, and improvements to ensure building safety. We did not include a factor for these costs due to the state's

Chapter III - The Analysis

current method for financing major building improvements. State-owned building improvements are normally completed with funding obtained through the Long-Range Building Program (LRBP). The Capitol Complex rental rate does not include a factor for these costs. Although there would be costs associated with improvements for a new building, funding to cover the costs would be separate from funds obtained for construction of the building.

During our preliminary review, we discussed two other possibilities for acquiring additional state office space: 1) *adding-on* to an existing building on the Capitol Complex, and 2) *purchasing* an existing building somewhere in Helena. According to Architecture and Engineering Division personnel, there are two buildings on the Capitol Complex which might support an addition, but these would only provide limited square footage. As far as purchasing a building in Helena, according to GSD personnel, there are no buildings available which they would consider purchasing. As a result, we eliminated review of these two areas from our analysis.

Assumptions Affecting Both Lease and Build Cost Projections

Three assumptions were made which affected both lease and building cost projections. The first is an inflation rate. Future costs were inflated by 3 percent per year. This affected future lease costs and building operational costs. This estimation was based, in part, on current lease contracts which include rent escalation factors based on increases in the Consumer Price Index. On average, leases with this escalation factor appear to increase rates by about 3 percent.

A discount rate of 4.7 percent was used to calculate present values. This discount rate is equal to the cost of capital for current GO bonds issued by DofA. Future sums of money must be discounted to account for changes in the time value of money.

The final assumption is the time period the analysis will consider. For our analysis we used 40 years. This period of time is normal for analysis of building costs. The figure represents an estimated useful life of a building. While buildings can and do last for more than 40 years, major maintenance may be required beyond this time frame.

Present Value Calculation

We then calculated the present values for leasing and building. Based on the assumptions above, our analysis indicates building office space is more favorable than continuing to lease. The present value costs for leasing and building appear in Table 4.

Table 4
Present Value Calculation¹ (November 1996)
(90,000 square foot building)

LEASE:	\$29,592,178
BUILD:	<u>25,354,913</u>
Savings ² :	\$ 4,237,265

¹ Based on a 40-year period.

² Estimated

Source: Compiled by the Legislative Audit Division.

The table on page 23 presents a comparison of lease and build costs on a yearly basis for a 90,000 square foot building.

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Various points can be made in viewing Table 5. First, annual lease costs increase steadily each year of the 40 year period. This is based on assuming the inflation rate will remain constant at 3 percent per year. Annual build costs also increase steadily over the 40 year period, with the following two exceptions:

1. The first year projection includes personnel moving costs mentioned previously, so a decrease exists between the first and second years.
2. There is a significant decrease after the 20th year because the debt service on the bonds will be retired.

The increase in build costs is based on the same 3 percent inflation rate assumption made for lease cost projections. Building costs are greater than lease costs for the first 20 years due to the debt service requirements for the GO bonds.

As can be seen in Table 5, present value calculations constantly decrease. The further in the future a sum of money exists, the less value it has in present dollars.

The analysis assumes payment at the end of the year. Thus, the cost values in year one have been discounted over the one year.

Table 5
Comparison of Annual Lease And Build Costs
(90,000 square foot building)

Year	Annual Lease Cost	Present Value	Annual Build Cost	Present Value
1	\$1,047,060	\$1,000,057	\$1,590,300	\$1,518,911
2	1,078,472	983,820	1,512,099	1,379,389
3	1,110,826	967,845	1,524,252	1,328,057
4	1,144,151	952,131	1,536,770	1,278,857
5	1,178,475	936,671	1,549,663	1,231,697
6	1,213,830	921,462	1,562,942	1,186,487
7	1,250,244	906,501	1,576,621	1,143,143
8	1,287,752	891,782	1,590,709	1,101,583
9	1,326,384	877,302	1,605,221	1,061,731
10	1,366,176	863,058	1,620,167	1,023,512
11	1,407,161	849,044	1,635,562	986,856
12	1,449,376	835,258	1,651,419	951,694
13	1,492,857	821,696	1,667,752	917,962
14	1,537,643	808,355	1,684,574	885,598
15	1,583,772	795,230	1,701,902	854,544
16	1,631,285	782,317	1,719,749	824,742
17	1,680,224	769,615	1,738,131	796,139
18	1,730,631	757,119	1,757,065	768,683
19	1,782,550	744,826	1,776,567	742,326
20	1,836,026	732,732	1,796,654	717,019
21	1,891,107	720,835	1,817,344	692,762
22	1,947,840	709,131	1,838,654	669,366
23	2,006,275	697,617	1,860,603	646,841
24	2,066,463	686,290	1,883,212	625,186
25	2,128,457	675,146	1,906,498	604,301
26	2,192,311	664,184	1,930,483	584,183
27	2,258,080	653,400	1,955,187	564,832
28	2,325,823	642,791	1,980,633	546,147
29	2,395,598	632,354	2,006,842	528,127
30	2,467,465	622,086	2,033,837	510,770
31	2,541,489	611,986	2,061,642	494,076
32	2,617,734	602,049	2,090,282	478,043
33	2,696,266	592,273	2,119,780	462,672
34	2,777,154	582,657	2,150,163	447,859
35	2,860,469	573,196	2,181,458	433,596
36	2,946,283	563,889	2,213,692	419,881
37	3,034,671	554,734	2,246,893	406,707
38	3,125,711	545,726	2,281,090	394,074
39	3,219,483	536,866	2,316,312	381,981
40	3,316,067	528,149	2,352,592	370,428
Totals:	\$78,949,643	\$29,592,178	\$51,885,315	\$25,354,913

Source: Compiled by the Legislative Audit Division.

Chapter III - The Analysis

Internal Rate of Return Calculation

The other methodology used to analyze cost projections was internal rate of return (IRR). The IRR is compared to the Cost of Capital (CC) to determine if the project should be accepted. The CC is the rate required to secure project funding. If the IRR is higher than the CC, building should be considered. The higher the IRR is above the CC, the better the advantage of building. We estimated the CC, based on a 20 year GO bond issue, to be about 4.7 percent. The IRR for our analysis, based on our assumptions, is 8.2 percent as shown in Table 6.

Table 6
IRR Compared to Cost of Capital
(November 1996)

IRR $\approx$ 8.2 percent

CC $\approx$ 4.7 percent

Source: Compiled by the Legislative Audit Division.

Sensitivity Analysis

The next step in our analysis was to adjust variables to determine which assumptions had a greater impact on the analysis. Several factors were changed and the outcome of the analysis was compared to our initial results. This process is referred to as "sensitivity analysis." Our approach was similar to a "break-even" analysis. We varied one factor at a time. Variation of multiple factors may have different effects on present value outcomes. The following paragraphs discuss the effects on outcomes from a sensitivity analysis.

The cost per square foot for construction of a new building must be increased from \$150 to almost \$195 for the present value to indicate leasing as the more favorable option. The present value for leasing is not effected by this change. Based on current information, it does not appear construction costs would be this high.

Chapter III - The Analysis

Another building cost which can be adjusted is operational cost. This factor only effects building cost projections. Operational costs must increase from \$4.37 /ft² to \$6.04 /ft² for the analysis to favor leasing over building.

If the building size is increased to 200,000 square feet, an estimated 1,000 FTE could be moved out of leased space. This is more than the total FTE occupying leased space as of November 1996. If the size of the building is increased, the analysis still supports building. However, the present value costs for leasing and building increase. Table 7 shows the present values for a 200,000 square foot building.

Table 7
Present Value Calculation (November 1996)
(200,000 square foot building)

LEASE: \$65,760,396

BUILD: \$56,344,251

Source: Compiled by the Legislative Audit Division.

There is no location in the Capitol area which could support a 200,000 square foot building. Thus, the building would have to be located off the Capitol Complex. This would probably create an additional cost for site acquisition. Our analysis does not include a cost for site acquisition.

As the inflation rate is decreased, the present value costs decrease. In addition, the estimated savings (the difference between the present values of leasing and building) decrease. If the inflation rate is decreased to less than 1.4 percent, the analysis supports leasing.

If additional building costs are included in the analysis, such as lease cancellation penalties or even new computer systems, the analysis still supports building. These "other" costs would have to increase by more than \$4.4 million to change the analysis to favor continued leasing.

Chapter III - The Analysis

The sensitivity analysis shows similar results on the IRR methodology. For each change noted above, with one exception, the IRR decreases to about 4.7 percent. This is the same percentage as the estimated cost of capital. This is the break-even point. The one exception is changing the size of the building to 200,000 square feet. This change does not impact the IRR. It remains at approximately 8.2 percent.

Retained Value

Our analysis, as shown above, only considers actual cash flows for both the lease and build options. It does not consider the value of the two options at the end of the 40-year evaluation period. Under the build option, the state would own a building that would have some value at the end of the time period. If the state determined at the end of the 40-year period that the building was no longer needed, and if the building were sold, then there would be an addition to the cash flow in our study. Under the lease option, there would be no residual value for the state. In this case the private building owners would retain that value.

If the new state building was adequately maintained over the years, then it could have a significant value at the end of 40 years. Many of the buildings currently owned by the state are more than 40 years old and are still in use and have value. The actual value of the new building would depend on market conditions for real estate in the future. Historically land and buildings appreciate over time. If we assume the 90,000 square foot building appreciates at 3 percent per year over the 40 years it would have a value of \$42,754,864 at the end of the study period. If the building were sold at the end of the 40-year period, the sale value would have to be discounted to present time in order to consider this value in our analysis. Using the same discount factor as we used for lease and build costs, the present value of the building would be \$6,809,548. This value would be a positive value and thus would have to be subtracted from the total present cost of the build option. This would reduce the total present cost of the 90,000 square foot building option from \$25,354,913 to \$18,545,365.

Non-Quantifiable Considerations

Up to this point, our analysis has only considered cost factors. There are other factors to consider in this type of analysis. The following sections discuss some of these considerations.

Efficiency Gains Due to Collocation

According to several department managers, having personnel in leased space negatively impacts program operations. Concerns include the following:

- Increased travel time.
- Communication.
- Coordination of services.
- Difficulties for clients.
- Inconvenience.
- Increased expense for off-site programs.
- Lack of cohesiveness.

If a new building is constructed, efficiency gains should be realized due to collocation of personnel. Collocation involves locating multiple programs in the same building/location. Equipment and other resources can be shared among programs which should decrease costs. Collocation should result in more efficient use of staff time. In addition, communication and coordination should be improved.

Locating buildings and parking for programs in leased space can be difficult in some locations in the Helena area. Collocation should heighten service to the public. This assumes good judgment in determining agency assignments for new space and in reallocating subsequent vacated space.

Collocation can be accomplished, to some extent, without building a new building. However, collocation is only possible if space is available. In the Helena area, available office space with large square footages is rather scarce according to GSD personnel.

Chapter III - The Analysis

Risks

There are certain risks taken with ownership of a building which do not exist when leasing. The most apparent of these risks are building maintenance, repairs, and improvements. These building improvements are the responsibility of the property owner. Thus, there is no added cost to the state when leasing. However, in the past the state has paid for costs associated with remodeling leased space.

If a new building is constructed and future downsizing of government operations occurs, state office space could become vacant. This is based on all, or the majority of, leased space being vacated. Maintaining leased space to a certain extent will provide flexibility for changes in government operations.

Another risk exists when vacating leased space. If penalty clauses exist in lease contracts, costs will increase. A cost amount was not included in our analysis to estimate this impact. Additionally, resources may be lost when vacating leased space. If leased space contains phone systems, or other specialized equipment, or structure modifications have been completed to accommodate special program needs, these resources may be lost if they are part of the property.

Legislative Action/Direction

Our cost analysis indicates building is a more cost effective option. However, construction of a building costing more than \$50,000 requires consent of the legislature.

Private/Community Views

View of the private sector and the general public are also important. If a new building is constructed and leases canceled as a result, the private sector may view this as reducing their clientele base.

Another concern exists with the "tax exempt" status of a state building. Some sources suggest the local tax base would be reduced if the state vacated leased space. However, the property vacated by the state is still under all tax requirements. If a private developer constructs a new building and the state enters into a lease/purchase agreement, the local tax base would be increased depending on the structure of the agreement.

Chapter III - The Analysis

If property vacated by the state remains vacant, there would be a loss of income and thus, the income tax base would be reduced. However, with the lack of available office space in the Helena area, the amount of time property remains vacant would probably be minimal. In addition, rental rates for private operations are usually higher than state rates. If vacated space is leased at a higher rate, the income tax base would be increased.

Chapter IV - Conclusion

Analysis Summary

We conducted an analysis of lease versus build to determine if it is less costly for the state to continue to lease or construct a new building for office space on the Capitol Complex. Our analysis included a review of current leases for office space in Helena. Lease information was also obtained directly from agency personnel. There are 13 agencies with contracts for 38 leases.

Future costs for leasing and building were estimated based on certain assumptions. One assumption made was the square footage of the new building. This determined how many FTE could be moved from leased space into state-owned space. Other variables were then finalized. Methodologies commonly used for this type of analysis were applied to projected costs. The results were compared to determine which option, lease or build, was more economical.

The final step was to modify assumptions to determine the impact on projected costs. The variables were changed to calculate the break-even point between lease and build.

Conclusion: Our Analysis Indicates Construction of a New Building is Less Costly Than Continuing to Lease

When comparing present value costs for leasing and building, the analysis indicates building is less costly than leasing. This is based on our assumptions. Our assumptions were developed using available information and reasonable judgment. The analysis assumes construction of a building on the Capitol Complex with a total space of 90,000 square feet. Based on a space allocation model of 200 square feet per FTE, this would allow 450 FTE to vacate leased space.

Our analysis is based on current lease and build costs. As time passes, these figures will probably change. Rent charges and construction costs may increase over time. In addition, our analysis uses a General Obligation (GO) bond option with an estimation of the cost of financing at 4.7 percent. This will most likely change, as will other costs for various financing options. Several of our assumptions are conservative; however, actual costs can change at any time.

Chapter IV - Conclusion

Considerations for Decision-Making

Ultimately, the legislature is the approving body for any new construction. Decision-makers must be provided with a thorough economic analysis to identify the most cost-effective option. Although our analysis indicates building is less costly than leasing, this is only one consideration in deciding whether to construct a new building for state office space.

Our analysis assumes a new building would be constructed on the Capitol Complex. This limits the location and size of the building. If an off-site location is pursued, additional building costs could be incurred. The main cost would be for acquiring land. The intent of building off-site may be for increased office space square footage. This would allow more FTE to be located in state-owned space. In addition, federal funding may be available to help defray costs associated with construction of the new building. However, there are advantages to occupying some leased space. This provides flexibility for changes in the work force and to meet program needs for "specialized" space.

The non-quantifiable considerations discussed at the end of Chapter III also need to be considered. Collocation of state personnel may result in more efficient program operations. Collocation can be accomplished without construction of a new building only if suitable space exists in the rental market. There are risks involved with owning a building including costs for improvements and loss of flexibility. Public views are an important consideration. Collocation of programs provides better coordination and accessibility to the public. Changes in the local tax base should also be considered.

The current direction of state government is one of cost savings. Our analysis indicates cost savings with construction of a building; however, this option requires the state to expend a large amount of funds initially. The cost savings occur over a 40 year period. The factors mentioned in this report, as well as others considered important to the decision-makers, must be weighed against projected cost savings to make an informed decision.

Agency Response

DEPARTMENT OF ADMINISTRATION
DIRECTOR'S OFFICE



MARC RACICOT, GOVERNOR

MITCHELL BUILDING

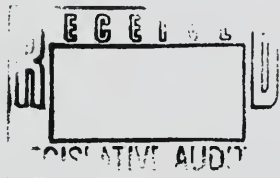
STATE OF MONTANA

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PO BOX 200101
HELENA, MONTANA 59620-0101

January 31, 1997

Mr. Scott Seacat
Legislative Auditor
State Capitol
Helena, MT 59620



Dear Mr. Seacat:

I am writing in response to the analysis your office conducted regarding leasing versus building in the Helena area. I believe that the analysis was properly and well done. The results are accurate and useful, and confirm the analysis of our own staff on this issue. We in the Department of Administration appreciate the professional manner in which your staff approached this analysis. The findings in this report will assist the Department and the Legislature in making some important decisions about space management in the Helena area.

Sincerely,

A handwritten signature in cursive script that reads "Lois Menzies".

LOIS MENZIES
Director

Appendix A

STATE OF MONTANA - LEASE INFORMATION (Helena)

AGENCY	LOCATION	FUNCTION	TERM EXPIRATION (years)	DATE	SQ FT BASE	RATE	ANNUAL COST	# OF FTE	SQ FT per FTE	UTILITIES paid by	annual \$
1 Administration	1500 East Sixth Avenue	Risk Management/Tort Defense	2	06/30/97	2,350.0	\$7.00	\$16,450.00	12.00	195.83	Lessor	\$0.00
2 Administration	930 Lyndale Avenue	Property and Supply Bureau	15	09/30/98	28,000.0	\$2.13	\$59,760.00	17.00	1,647.06	Lessee	\$17,848.00
3 Administration	28 West Sixth Avenue	Appellate Defenders Office	3	04/01/99	600.0	\$8.50	\$5,100.00	2.00	300.00	Lessor	\$0.00
4 Commerce	836 Front Street	Bid Hang, Sec 8, HOME, Financial	8.3	06/30/2002	12,300.0	\$6.58	\$80,909.40	47.25	260.32	Lessee	\$13,306.92
5 Commerce	2525 North Montana	Lottery	5	02/28/97	13,000.0	\$6.10	\$79,260.00	29.00	448.28	Lessee	\$13,356.00
6 Commerce	111 North Jackson - Arcade Bldg	Profession Licensing - Admin	6	07/31/2000	10,091.0	\$2.08	\$21,000.00	32.00	315.34	Lessor	\$0.00
7 Commerce	1430 Dodge Avenue	Weights & Measures Lab	10	05/01/2004	1,920.0	\$4.60	\$8,832.00	1.00	1,920.00	Shared	\$1,680.00
8 Commerce	111 North Jackson - Arcade Bldg	Profession Licensing - Attorneys	4	07/31/2000	850.0	\$8.50	\$7,224.96	5.00	170.00	Lessor	\$0.00
9 Commerce	555 Fuller	Board of Investments	2.83	06/30/98	10,000.0	\$8.51	\$85,116.00	30.00	333.33	Lessor	\$0.00
10 Commerce	111 North Jackson - Arcade Bldg	Professional Licensing - Nurses	4	07/31/2000	1,183.0	\$8.50	\$10,055.52	5.00	236.60	Lessor	\$0.00
11 Commerce	111 North Jackson - Arcade Bldg	Board of Medical Examiners	4.58	07/31/2000	733.0	\$10.00	\$7,332.00	4.00	183.25	Lessor	\$0.00
12 Commerce	111 North Jackson - Arcade Bldg	Board of Outfitters	6	07/31/2000	445.0	\$11.19	\$4,980.00	3.00	148.33	Lessor	\$0.00
13 Consumer Counsel	34 West Sixth Ave - Suite 2B	Administration	2	06/30/97	1,420.0	\$7.88	\$11,196.00	5.00	284.00	Lessor	\$0.00
14 DEQ	2209 Phoenix Ave	Remediation Division	8	06/30/2002	28,256.0	\$8.50	\$240,176.04	100.00	282.56	Lessor	\$0.00
15 DNRC	21 North Last Chance Gulch	Water Resources Regional Office	3.33	04/30/99	2,800.0	\$8.56	\$23,968.00	8.00	350.00	Lessor	\$0.00
16 DNRC	1625 11th Ave - USF&G Bldg	Administration	4	06/30/97	29,925.0	\$7.22	\$215,909.01	91.00	328.85	Lessee	\$21,905.83
17 DNRC	2580 Airport Road	Air Operations	6	08/31/98	7,200.0	\$0.54	\$3,872.00	4.00	1,800.00	Lessor	\$0.00
18 DNRC	New York Bldg - 48 North LCG	Water Resources Division	3	04/30/99	16,893.0	\$9.35	\$157,950.00	60.30	280.15	Lessor	\$0.00
19 DPHHS	2550 Prospect Ave	Disability Determination Services	10.25	06/30/2005	10,702.0	\$8.50	\$90,960.00	40.00	267.55	Lessor	\$0.00
20 DPHHS	111 North Jackson - 2B & 2C	Child Support Enforcement	5	09/30/97	4,015.0	\$8.01	\$32,143.86	20.00	200.75	Lessor	\$0.00

STATE OF MONTANA - LEASE INFORMATION (Helena)

AGENCY	LOCATION	FUNCTION	TERM EXPIRATION (years)	DATE	SQ FT	BASE RATE	ANNUAL COST	# OF FTE	SO FT per FTE	UTILITIES paid by	annual \$	
21	DPHHS	316 North Park	Child & Adult Protective Services	6.42	06/30/98	6,250.0	\$8.56	\$53,499.96	29.50	211.86	lessor	\$0.00
22	DPHHS	111 North Last Chance Gulch- 1C	DDPAC & MTAP	4.08	09/30/2000	1,791.7	\$8.50	\$15,229.45	6.00	298.62	Shared	\$1,846.00
23	DPHHS	3075 North Montana	Child Support, L&C OPA, Dist. Off.	9	02/28/2001	24,535.2	\$8.50	\$208,557.96	114.00	215.23	lessor	\$0.00
24	DPHHS	2905 North Montana	Microcomputer & Network Services	3	03/31/2000	2,877.0	\$8.50	\$24,454.44	0.00	N/A	lessor	\$0.00
25	Justice	Lundy Center	Driver Licensing Office	2	12/31/98	750.0	\$6.24	\$4,680.00	4.00	187.50	lessor	\$0.00
26	Justice	2550 Prospect Ave	Gambling Control Division	10.25	06/30/2005	8,755.0	\$8.50	\$74,417.50	25.00	350.20	lessor	\$0.00
27	Justice	2550 Prospect Ave	Highway Patrol Division	9.25	06/30/2005	7,583.0	\$8.50	\$64,455.50	36.00	210.64	lessor	\$0.00
28	Labor & Industry	111 North Last Chance Gulch	Veteran's Emp. & Training	5	06/30/97	500.0	\$7.31	\$3,653.16	2.00	250.00	lessor	\$0.00
29	Labor & Industry	616 Helena Ave	Human Rights Commission	7	08/01/2001	4,203.0	\$7.27	\$30,543.00	21.32	197.14	lessor	\$0.00
30	Labor & Industry	1805 Prospect Ave	Employment Relations Division	4	06/30/97	17,000.0	\$8.00	\$135,999.96	89.85	189.20	lessee	\$21,723.36
31	Labor & Industry	1625 11th Ave	Workers Compensation Court	6	07/31/99	2,400.0	\$7.54	\$18,091.80	6.00	400.00	lessor	\$0.00
32	Montana Arts Council	316 North Park - Room 252	Promotion of the Arts	5	06/30/97	1,876.0	\$9.61	\$18,028.00	7.00	268.00	lessor	\$0.00
33	OPI	1228 11th Ave	School Foods Div, training, storage	4	09/30/97	3,096.0	\$8.22	\$25,440.00	9.00	344.00	lessor	\$0.00
34	OPI	1225-1227 11th Ave	Id&T, Cent. Serv., State Dist., Info. Sys.	3	06/30/97	9,000.0	\$5.78	\$51,978.60	30.00	300.00	Shared	\$11,440.00
35	Public Service Regulation	1701 Prospect Ave	Public Service Commission	7	08/31/98	15,600.0	\$9.30	\$145,110.60	37.00	421.62	lessor	\$0.00
36	Revenue	Steamboat Block (616 Helena Ave)	Property Assessment Division	6	10/31/2001	11,784.0	\$7.65	\$90,148.00	34.00	346.59	lessor	\$0.00
37	Revenue	Benton & Clarke	Appraisal Office Parking	1	10/31/95	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38	Supreme Court	318 North Last Chance Gulch	Court Assess. & FC Review Board	2	06/30/97	1,300.0	\$5.54	\$7,200.00	5.00	260.00	lessor	\$0.00
TOTALS						301,984.9	\$7.45	\$2,133,682.72	971.22	400.08		\$105,259.83
						(sum)	(avg)	(sum)	(sum)	(avg)		(sum)

STATE OF MONTANA - LEASE INFORMATION (Helena)

	JANITORIAL		MAINTENANCE		PARKING		PASS-THROUGH		TRUE COST		COMMENTS
	paid by	rate	annual \$	paid by	annual \$	rate	annual \$	item(s)	annual \$	per sq ft	
1	Lessor	N/A	\$0.00	Lessor	N/A	Public	N/A	N/A	\$0.00	\$7.00	\$16,450.00
2	Lessee	\$0.11	\$2,988.00	Lessee	\$6,401.00	Lessor	N/A	insurance	\$4,317.00	\$3.26	\$91,314.00
3	Lessee	\$0.50	\$300.00	Lessor	N/A	Lessee	\$38.00	N/A	\$0.00	\$10.52	\$6,312.00
4	Sub-lessee	\$0.56	\$6,845.28	Lessor	N/A	Lessor	N/A	tax	\$81.79	\$8.22	\$101,143.39
5	Lessee	\$0.46	\$5,940.00	Shared	\$280.00	Lessor	N/A	security sys.	*	\$7.60	\$98,836.00
6	Lessee	\$0.42	\$4,200.00	Lessee	\$20,000.00	Lessee	\$34.38	tax, insurance	\$1,700.00	\$5.96	\$60,100.00
7	Lessor	N/A	\$0.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$5.48	\$10,512.00
8	see #7			see #7		see #7		see #7		\$8.50	\$7,224.96
9	Lessor	N/A	\$0.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$8.51	\$85,116.00
10	see #7			see #7		see #7		see #7		\$8.50	\$10,055.52
11	see #7			see #7		see #7		see #7		\$10.00	\$7,332.00
12	see #7			see #7		see #7		see #7		\$11.19	\$4,980.00
13	Lessee	\$0.00	\$0.00	Lessor	N/A	Lessee	\$31.35	N/A	\$0.00	\$9.21	\$13,077.00
14	Lessor	N/A	\$0.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$8.50	\$240,176.04
15	Lessee	\$0.75	\$2,112.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$9.31	\$26,080.00
16	Lessee	\$0.60	\$17,905.94	Shared	\$839.25	Lessor	N/A	N/A	\$0.00	\$8.57	\$256,564.03
17	Lessor	N/A	\$0.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$0.54	\$3,872.00
18	Lessee	\$0.52	\$8,700.00	Lessor	N/A	Lessee	\$32.84	utilities *	\$682.00	\$11.31	\$191,092.00
19	Lessor	N/A	\$0.00	Lessor	N/A	Lessor	N/A	N/A	\$0.00	\$8.50	\$90,960.00
20	Lessee	\$0.82	\$3,312.00	Lessor	N/A	Lessee	\$4.30	N/A	\$0.00	\$9.09	\$36,487.86

STATE OF MONTANA - LEASE INFORMATION (Helena)

	JANITORIAL		MAINTENANCE		PARKING		PASS-THROUGH	TRUE COST		COMMENTS		
	paid by	rate	annual \$	paid by	annual \$	rate	paid by	item(s)	annual \$		per sq ft	annual \$
21	Lessor	N/A	\$0.00	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$8.56	\$53,499.96	
22	Lessee	\$1.74	\$3,120.00	Lessor	N/A	\$17.17	\$1,236.00	N/A	\$0.00	\$11.96	\$21,433.45	Utilities: dept. pays power and gas only
23	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	tax	\$7,841.28	\$8.82	\$216,399.24	
24	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	N/A	\$0.00	\$8.50	\$24,454.44	
25	Lessee	\$1.06	\$792.00	Lessor	N/A	N/A	\$0.00	N/A	\$0.00	\$7.30	\$5,472.00	
26	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	tax, insurance	\$0.00	\$8.50	\$74,417.50	* Pass-through costs exist, but no dollar amount given
27	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	tax, insurance	\$0.00	\$8.50	\$64,455.50	* Minor adjustment if exceeds base, 2,636 sq. ft. Radio Shop (\$5.50 psf) not included
28	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	N/A	\$0.00	\$7.31	\$3,653.16	
29	Lessor	N/A	\$0.00	Lessor	N/A	N/A	\$0.00	N/A	\$0.00	\$7.27	\$30,543.00	
30	Lessee	\$0.53	\$9,000.00	Shared	\$891.60	N/A	Lessor	N/A	\$0.00	\$9.86	\$167,614.92	
31	Lessee	\$0.80	\$1,920.00	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$9.23	\$22,163.52	
32	Lessee	\$0.42	\$780.00	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$10.03	\$18,808.00	Janitorial: \$15 per week
33	Lessee	\$1.11	\$3,448.32	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$9.33	\$28,888.32	This building to be demolished May 1997
34	Lessee	\$0.75	\$6,747.24	Lessor	N/A	N/A	Lessor	N/A	\$1,540.00	\$7.97	\$71,705.84	Utilities: power & gas only; Owner adding 7,000 square feet to building
35	Lessor	N/A	\$0.00	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$9.30	\$145,110.60	
36	Lessor	N/A	\$0.00	Lessor	N/A	N/A	Lessor	N/A	\$0.00	\$7.65	\$90,148.00	Lease cost increases to \$90,148 in 1997
37	N/A	N/A	N/A	N/A	N/A	\$30.00	\$5,760.00	N/A	N/A	N/A	\$5,760.00	16 parking spaces; 10% prepayment discount
38	Lessor	N/A	\$0.00	Lessor	N/A	\$12.00	\$720.00	N/A	\$0.00	\$6.09	\$7,920.00	
		\$0.66 (avg)	\$78,114.78 (sum)		\$28,411.85 (sum)	\$25.00 (avg)	\$48,501.00 (sum)		\$16,162.07 (sum)	\$8.27 (avg)	\$2,410,132.25 (sum)	

Appendix B

LEASE INFORMATION - STORAGE SPACE (Helena)

AGENCY	LOCATION	FUNCTION	TERM (years)	EXPIRATION DATE	SQ FT	BASE RATE	ANNUAL COST	UTILITIES paid by annual \$	JANITORIAL paid by annual \$	COMMENTS	
Administration	5 S Last Chance Gulch	State Fund - Records Storage	5	01/10/99	3,600	\$3.85	\$13,860.00	Shared	U	Lessor U \$0.00	Utilities - electricity by DoA - heat, sewer, garbage by Lessor
Agriculture	1530 Columbia Ave	Storage	N/A	month-to-month	360	\$2.98	\$1,072.80	Lessee	U	Lessee U \$0.00	\$107 discount for payments prior to June 30 for next FY
Commerce	Custer Ave	Board of Plumbers	N/A	month-to-month	50	\$3.78	\$189.00	Lessee	U	N/A \$0.00	
DNRC	1403 Oakies	Joint USGS Water Project	3	03/31/99	2,500	\$5.04	\$12,600.00	Lessee	U	N/A \$0.00	Warehouse w/ fenced lot
DNRC	21 N Last Chance Gulch	Water Resources Regional Office	3.33	04/30/99	405	\$8.56	\$3,468.80	Lessor	U	Lessee \$0.55	\$222.75 Storage space has same rate as office space
DNRC	1825 11th Ave	State Land Administration	4	06/30/97	800	\$3.75	\$2,250.00	Lessor	U	Lessee \$0.80	\$480.00 2% inflation clause
DOT	Airport - Hangar 7 East	Aeronautics	N/A	month-to-month	U	U	\$972.00	Lessor	U	Lessee U \$0.00	Hangar
DPHHS	1700 National	Food Distribution	1	06/30/96	31,843	\$3.73	\$118,774.39	Lessee	U	Lessee U \$0.00	Underlying ground rented by landlord month-to-month
DPHHS	Arcade Bldg/Unit 1C	DDPAC & Hearing Impaired	3	08/31/98	156	\$0.00	\$0.00	Lessee	U	Lessee \$0.00	Utilities & Janitorial included in Office Space spreadsheet
DPHHS	34 N Last Chance Gulch	Storage	2	06/30/96	623	\$4.50	\$2,803.50	Lessor	U	Lessor N/A \$0.00	
FWP	2650 Euclid Ave	Area Resource-Maintenance Shop	1	05/31/96	2,000	\$3.60	\$7,200.00	Lessor	U	Lessor N/A \$0.00	
FWP	Regional Airport	Aircraft storage	U	06/30/2000	U	U	\$2,700.00	Lessee	U	Lessee U \$0.00	Square footage not given, CPI inflation rate
Historical Society	1414 North Montana	Storage for Museum Program	N/A	month-to-month	80	\$4.80	\$384.00	Lessee	U	N/A \$0.00	
Justice	L&C County Fairgrounds	Highway Patrol	N/A	month-to-month	3,600	\$0.92	\$3,312.00	Lessor	U	Lessor N/A \$0.00	Fenced storage for patrol cars
Justice	2550 Prospect Ave	Highway Patrol	9	06/30/2005	2,836	\$5.50	\$14,498.00	Lessor	U	Lessor N/A \$0.00	Shop rate increases years 6-9 to \$6.00 psf
Military Affairs	Airport Road	C-12 Hangar	1	09/30/95	3,600	\$5.72	\$20,592.00	Lessor	U	Lessee U \$0.00	2% inflation clause
DPI	777 Center Drive	Storage	1	month-to-month	200	\$2.50	\$500.00	N/A	U	N/A \$0.00	
TOTALS					52,253 (sum)	\$3.95 (avg)	\$205,174.49 (sum)	\$0.00 (sum)		\$702.75 (sum)	

U = Information unavailable

Source: 1998 Statewide Lease Report, General Services Division

Appendix C

Present Value and Internal Rate of Return Analysis

Present Value

Money has time value. The value of money is not completely understood without considering that value at a point in time. In order to evaluate alternatives that involve various dollar amounts spread over time, it is necessary to shift the various sums of money to some common point in time. Very often the common point in time that is used is time zero or the present time. To do this, all dollar values in the future are brought back to the present time by considering the time value of money. The "present value" of several alternatives can then be accurately compared. This is called present value analysis.

The problem is to find the present worth of a sum of money that is out in the future. A future dollar must be discounted to reflect the fact that today's dollar can grow for one year at some given interest rate. The amount of discount is based on a discount rate or interest rate and the number of years in the future when the dollar amount occurs. The discount factor (DF) is calculated by a mathematical equation involving the interest rate and the number of years as shown in the following figure.

Discount Factor
(present value analysis)

$$DF = 1 \div (1 + i)^n$$

i = interest rate

n = number of years

Source: Compiled by the Legislative Audit Division.

To determine the present value of a future sum of money, the future sum is multiplied by the discount factor. In the following example we calculate the value of \$100 one year from now if the interest rate is 5 percent? To determine this, you must multiply \$100 by the discount factor.

Present Value Example
(\$100 in 1 year at 5%)

$$\begin{aligned}\text{Discount Factor} &= 1 \div (1 + .05)^1 \\ &= 0.9524\end{aligned}$$

$$\begin{aligned}\text{Present Value} &= \text{future value} * \text{DF} \\ &= \$100 * 0.9524 \\ &= \$95.24\end{aligned}$$

Source: Compiled by the Legislative Audit Division.

The example above shows \$100 a year from now is worth \$95.24 today, if the interest rate is 5 percent. There are two variables in the mathematical equation associated with the discount factor: 1) the interest rate *i*; and 2) the time period *n*. As these two variables increase, the discount factor and the present value decreases. Thus, the greater the interest rate and the longer the time period, the less a future sum of money is worth today.

Internal Rate of Return

Another method used in analyzing alternatives is the *internal rate of return (IRR)*. This is the rate of return a project will earn. The IRR analysis is similar to the present value analysis except the emphasis is upon calculating the interest rate associated with the expenditure of funds rather than calculating an equivalent sum of money. In our analysis of build vs lease, we are analyzing if the expenditure of funds for a new building will result in an overall cost reduction for the state. In conducting the analysis, when the cost of building is less than the cost of leasing, the cash flow is a positive value. The IRR is the interest rate which makes the net present value (NPV) of the cash flows on a project equal to zero.

The IRR can be compared to the cost of capital to determine whether a project should be completed. If the NPV of the cash flows equal zero, the IRR equals the cost of capital, and the two alternatives being analyzed are cost equivalent. An IRR greater than the cost of capital indicates the rate of return on the project is better than the cost of capital. For example, if a project is to be funded with GO bond proceeds, the IRR should be greater than the interest rate on the bonds in order to accept the project.

This method also requires calculation of a mathematical equation. The following figure shows the IRR equation.

Internal Rate of Return
(sum of NPV = 0)

$$\sum (CF \div (1 + IRR)^t) = 0$$

CF = cash flows

IRR = interest rate

t = period (1 through n number of years)

Source: Compiled by the Legislative Audit Division.

The equation in the figure above is similar to the discount factor noted previously. The cash flow for each period is each future sum of money. The rest of the equation is the discount factor for each period of time. IRR replaces *i* as the interest rate. The Greek symbol at the beginning of the equation is the mathematical symbol for summing numerous items. Thus, the present value of each future sum of money is added together. The percentage needed for IRR to make the equation equal to zero is the internal rate of return.

The process used to calculate IRR is one of "trial-and-error." A reasonable guess is made for IRR. The guess is entered into the formula. If the solution is less than zero (negative), a new guess, less than the previous guess, is made for IRR. Conversely, if the result is positive, an IRR greater than the previous guess is selected. This process is repeated until the IRR is identified.

